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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/722,478 | 11/28/2003 | Thomas M. Moy | 20435-00144-US01 | 8017 |

30678 7590 03/09/2005

CONNOLLY BOVE LODGE & HUTZ LLP
SUITE 800
1990 M STREET NW
WASHINGTON, DC 20036-3425

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| EXAMINER |
| MCCLENDON, SANZA L |

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| ART UNIT | PAPER NUMBER |
| 1711 | |

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,478

Applicant(s)

MOY ET AL.

Examiner

Sanza L McClendon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/04.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 9 and 10, applicant discloses 1) “a preferred thiol is liquid, miscible with the acrylate oligomers and monomers of the present invention”—page 9—and 2) “the thiol of the present invention must be at least difunctional in order to effect crosslinking of the pendent acrylate groups”—page 10. However there is not a disclosure of oligomers having acrylate groups or pendent acrylate groups. Applicant discloses vinyl ether functional groups not acrylate groups. Clarification is requested.

Appropriate correction is required.

Claim Objections

2. Claim 5 contains the trademark/trade name Desmodur W. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the diisocyanate, methylene bis (cyclohexyl) isocyanate and, accordingly, the identification/description is indefinite.

Claim Notes

3. Note the claims have been re-number according to 37 CFR 1.126—see MPEP 608.1(j) because original claims were presented without a number 4.

Claim Rejections - 35 USC § 102/35 USC § 103

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 6-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nerad et al (5,641,426).

Nerad et al teaches vinyl-ether-based matrix materials for optical responsive films in light modulating devices. The cured matrix film includes the reaction product of an isotropic polymerizable material that includes at least one vinyl-ether and at least one multi-functional reactant other than a vinyl-ether. The vinyl-ether compound may be a multi-functional vinyl-ether, a mono-functional vinyl-ether or a combination of both, wherein vinyl-ether functional urethane oligomers is disclosed as a usable vinyl-ether compound—see column 2, line 21-22 and claims 6-10. Said multi-functional reactant other than a vinyl-ether can be a thiol functional compound, such as those having the formula found in column 6, lines 24-40. These are esters of polyhydroxy compounds, such as glycerol or pentaerythritol, wherein compound like trimethylolpropane tris (3-mercaptopropionate) and pentaerythritol tetra (3-mercaptopropionate) is taught. These appear to read on at least some of the polyfunctional mercaptans of claims 7-11.

Said film can be produced by curing the vinyl-ether based composition with heat or by exposure to radiation, such as UV or electron beam—see column 4, lines 20-25. The reference teaches photoinitiation is preferred for curing the matrix—see column 9, lines 45-50. The examiner

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deems that applicants instantly claimed composition comprises open-language (comprising) and is therefore open to other components. Nerad et al teaches the polymeric matrix film can have enhanced T-peel adhesion by adding one or more copolymerizable acid reactant, such as acrylic acid or others found in column 7. This appears to anticipate the tackifiers of claim 11. Said matrix composition can be applied to at least one substrate or used in a multi-layered composite film. Said material substrates can be found in column 10, lines 51-55. The cured coated film and method on making said film appears to anticipate the adhesive product of claim 15 and method of claim 16, since the cured matrix is adhered permanently to the substrate once cured. Additionally the compositions disclosed by the reference anticipated claims 1 and 12-14.

While Nerad et al does not expressly disclose applying said matrix composition using a hot-melt coater, the reference teaches coating by extrusion onto a roller coated with a substrate film from a coating die, wherein the die and the roller are heated—see examples starting in column 12, lines 29-38. This appears to anticipate applicant's instant claims 17-18. However, in the alternative, hot melt coaters are well known in the art and it would have been obvious for an artisan of ordinary skill in the art to apply said composition by any known method. The motivation would have been a reasonable expectation of obtaining an evenly coated film having a desired thickness in the absence of evidence to the contrary and/or unexpected results.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nerad et al (5,641,426) in view of Hagstrom et al (5,578,693).

Nerad et al teaches vinyl-ether-based matrix materials for optical responsive films in light modulating devices. The cured matrix film includes the reaction product of an isotropic polymerizable material that includes at least one vinyl-ether and at least one multi-functional

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reactant other than a vinyl-ether. The vinyl-ether compound may be a multi-functional vinyl-ether, a mono-functional vinyl-ether or a combination of both, wherein vinyl-ether functional urethane oligomers is discloses as a usable vinyl-ether compound—see column 2, line 21-22 and claims 6-10. Said multi-functional reactant other than a vinyl-ether can be a thiol functional compound, such as those having the formula found in column 6, lines 24-40. These are esters of polyhydroxy compounds, such as glycerol or pentaerythritol, wherein compound like trimethylolpropane tris (3-mercaptopropionate) and pentaerythritol tetra (3-mercaptopropionate) is taught. See the remaining rejection in the above paragraph 6.

Nerad et al does not expressly teach the reaction components used to prepare the vinyl-ether terminated polyurethane.

Hagstrom et al teaches vinyl-ether terminated oligomers are well known in the art. The reference teaches making multi-functional terminally unsaturated urethane oligomers, wherein said terminal ends can be acrylate or vinyl-ether. Said urethane oligomers are obtained by reacting at least one diisocyanate with at least one polyol to form a isocyanate terminated oligomer, reacting said prepared oligomer with at least hydroxyl-terminated acrylate or vinyl-ether to form a terminally unsaturated urethane oligomer and then reacting the remaining isocyanate groups with at least one alkoxylated polyhydric alcohol. Said polyols used in the first reaction step can be a polyether polyol or a polyester polyol having an equivalent weight of up to 2000. Said diisocyanates can be found in column 3, lines 14-21, wherein Desmodur W, IDPI, and TMDI are disclosed. Said urethane oligomers formed having molecular weight in the range of 1,500 to 10,000.

Nerad et al and Hagstrom et al are analogous art because they are from the same field of endeavor that is the art using of vinyl-ether functional urethane compounds.

Therefore one of ordinary skill in the art would have found it obvious to use a vinyl-ether terminated urethane oligomer prepared from a polyol having molecular weight of up to 2000 with the above listed diisocyanates having molecular weights up to at least 10,000 since these are well-known in the art, see Hagstrom et al, in compositions such as those described by Nerad et al. The motivation would have been a reasonable expectation of successfully radiation curing said compositions as suggested by both references in the absence of evidence to the contrary and/or unexpected results.

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Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/5/05

Sanza L McClendon

Examiner

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